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MARSHALL STAR

In This Week's Star ⊟

› NASA Selects Space Launch System Advanced Booster Proposals
› Earth-Observing Camera to Launch to International Space Station
› Several Events Planned to Celebrate Curiosity Landing on Mars
› Recent Mentor-Protégé Agreements Foster Collaboration, Advance Capabilities
› J-2X Engine With Nozzle Extension Goes the Distance
› Latest Crew Blasts Off For International Space Station
› International Space Station Program Scientist Visits Marshall Center
› Marshall's Small Business Specialist David Brock Discusses Effective Marketing During Maine Aerospace Alliance's NASA Industry Day
› Dexter Brooks, Director of Federal Sector Programs, to Hold Session About Unconscious Bias at Marshall on July 18
› James E. Kingsbury, Former Director of Marshall's Science & Engineering, Dies

NASA Selects Space Launch System Advanced Booster Proposals

NASA news release

NASA has selected six proposals to improve the affordability, reliability and performance of an advanced booster for the Space Launch System, or SLS. The awardees will develop engineering demonstrations and risk reduction concepts for SLS, a heavy-lift rocket that will provide an entirely new capability for human exploration beyond low-Earth orbit.

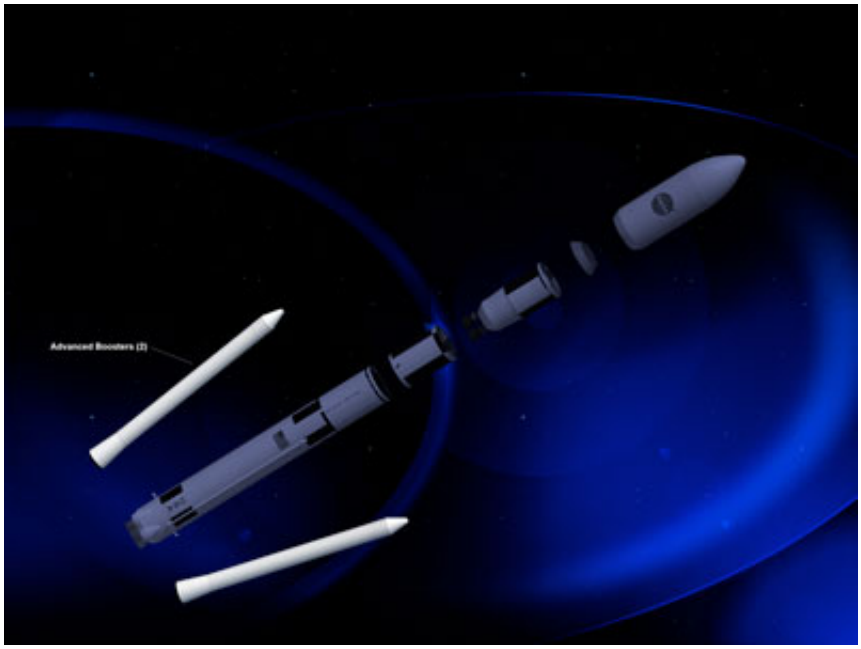

Image right: An expanded view of an artist rendering of the 130-metric-ton configuration of NASA's Space Launch System, managed by the Marshall Center. The evolved SLS vehicle will require an advanced booster, highlighted above, with significant increase in thrust from any existing U.S. liquid or solid boosters. (NASA/MSFC)

"The initial SLS heavy-lift rocket begins with the proven hardware, technology and capabilities we have today and will evolve over time to a more capable launch vehicle through competitive opportunities," said William Gerstenmaier, associate administrator for the Human Exploration Operations Mission Directorate at NASA Headquarters. "While the SLS team is making swift progress on the initial configuration and building a solid baseline, we also are looking ahead to enhance and upgrade future configurations of the heavy-lift vehicle. We want to build a system that will be upgradable and used for decades."

Designed to be flexible for launching spacecraft, including NASA's Orion multipurpose vehicle, for crew and cargo missions, SLS will enable NASA to meet the president's goal of sending humans to an asteroid by 2025 and to Mars in the 2030s. The initial SLS configuration will use two five-segment solid rocket boosters similar to the solid rocket boosters that helped power the space shuttle to orbit. The evolved SLS vehicle will require an advanced booster with significant increase in thrust from any existing U.S. liquid or solid boosters.

Individual awards will vary with a total NASA investment of as much as $200 million.

Proposals selected for contract negotiations are:
-- "Subscale Composite Tank Set," Northrop Grumman Systems Corp. Aerospace Systems
-- "Full-Scale Combustion Stability Demonstration," Aerojet General Corp.
-- "F-1 Engine Risk Reduction Task," Dynetics Inc.
-- "Main Propulsion System Risk Reduction Task," Dynetics Inc.
-- "Structures Risk Reduction Task," Dynetics Inc.
-- "Integrated Booster Static Test," ATK Launch Systems Inc.

"We are building a new national capability to carry astronauts and science experiments beyond Earth orbit to new destinations in space," said Todd May, SLS program manager at the Marshall Space Flight Center. "Our industry partners have presented a variety of options for reducing risk while increasing performance and affordability, and we're looking forward to seeing their innovative ideas come to life."

Image left: Artist concept shows NASA's Space Launch System rising from a launch pad. (NASA/MSFC)

The proposal selections are the first step in the NASA Research Announcement procurement process. The second step, the formal contract award, will follow after further negotiations between NASA and selected organizations. All funded efforts will demonstrate and examine advanced booster concepts and hardware demonstrations during a 30-month period. This risk mitigation acquisition precedes the follow-on design, development, testing and evaluation competition for the SLS advanced booster currently planned for 2015.

All proposals will be valid for 12 months to allow for a later award should the opportunity become available, unless withdrawn by the offeror prior to award. Successful offerors to this NRA are not guaranteed an award for any future advanced booster acquisition.

The first test flight of NASA's Space Launch System, which will feature a configuration for a 77-ton (70-metric-ton) lift

capacity, is scheduled for 2017. As SLS evolves, a two-stage launch vehicle configuration will provide a lift capability of 143 tons (130 metric tons).

The Marshall Center manages the SLS Program for the agency. For information, visit http://www.nasa.gov/sls.

› Back to Top

Earth-Observing Camera to Launch to International Space Station

By Janet Anderson

A remote-controlled Earth-observing camera system named ISERV will be launched to the International Space Station aboard the Japanese Aerospace Exploration Agency's HTV-3 vehicle this week. Once installed, the system will be directed by researchers on the ground to acquire imagery of specific areas of the globe for disaster analysis and environmental studies.

Image right: The ISERV camera, when installed on the space station, will be positioned to look through Destiny's Earth-facing window. ISERV will receive commands from Earth and acquire image data of specific areas on Earth the next time the station passes over the region. (www.servirglobal.net)

ISERV Pathfinder is a new imaging instrument designed and built at the Marshall Space Flight Center. The HTV-3 launch is scheduled for July 20 at 8:06 p.m. CDT from the Tanegashima Space Center in southern Japan.

ISERV is short for the International Space Station SERVIR Environmental Research and Visualization System. The space station provides researchers a unique perspective through global observations from space. SERVIR is a Spanish acronym meaning "to serve." Also known as the Regional Visualization and Monitoring System, the program provides satellite data and tools to environmental decision makers in developing countries. SERVIR is a partnership between NASA and the U.S. Agency for International Development, or USAID.

ISERV will be installed in the Window Observational Research Facility, or WORF, in the space station's Destiny module. The system is intended to help scientists gain operational experience and expertise and to inform the design of a more capable system in the future. Ideally, a future operational system, and perhaps Pathfinder itself, will be able to monitor disasters on Earth.

"ISERV came about because officials in developing countries are sometimes unable to acquire the images they need to

address environmental threats and provide post-disaster assessments," said Nancy Searby, capacity building program manager for the SERVIR program at NASA Headquarters. "The SERVIR team approached NASA's ISS and Earth Science Applied Sciences Program with the concept of acquiring the needed imagery from the ISS. The ISERV testbed payload is a result of that collaboration."

The ISERV system, based on a modified commercial telescope and driven by custom software, will use the Earth-facing Destiny science window to obtain images of the Earth's surface. It will then transmit the data to scientists on the ground.

"Images captured from ISERV on the ISS could provide valuable information back here on Earth," said Dan Irwin, SERVIR program director at Marshall. "We hope it will provide new data and information from space related to natural disasters, environmental crises, and the increased effects of climate variability on human populations."

ISERV is the first of an envisioned series of Earth-observing instruments bound for the space station, each featuring progressively more capable sensors. Future sensors could be mounted on the exterior of the station for a clearer, wider view of Earth.

The team at the Payload Operations Center at Marshall is creating computer-based materials for training the space station crew to assemble and install ISERV in the WORF rack. Normal operations aboard the station are set to begin in November.

"The addition of ISERV will enhance the growing set of tools aboard the station to monitor Earth," said Julie Robinson, International Space Station program scientist at the Johnson Space Center. "It reaffirms the station's commitment to helping solve global issues."

ISERV development was funded as a collaborative effort between NASA's Human Exploration and Operations Directorate and the Science Mission Directorate's Earth Science Division Applied Sciences Program.

SERVIR consists of a coordination office and student research laboratory at Marshall and active "hubs" located in Kenya at the Regional Center for Mapping of Resources for Development and in Nepal at the International Centre for Integrated Mountain Development, as well as a network affiliate in Panama at the Water Center for the Humid Tropics of Latin America and the Caribbean.

The SERVIR coordination office manages the program, develops application prototypes for the SERVIR website, and integrates new or relevant technologies from NASA and other scientific research partner organizations into the system to meet the needs of the host countries. SERVIR's primary technical work occurs at the hubs, which are staffed by in-country and in-region experts. The hubs interface and coordinate with other international and national organizations in their respective regions regarding climate change, environmental monitoring, disasters, weather and mapping, among others.

SERVIR, jointly funded by NASA and USAID, is part of the Earth Science Division's Applied Sciences Program in NASA's Science Mission Directorate in Washington. Four other NASA field centers work with Marshall on the program: Goddard Space Flight Center, Ames Research Center, the Jet Propulsion Laboratory and Langley Research Center.

For more information about SERVIR, visit: http://www.nasa.gov/servir.

Anderson is a public affairs officer in the Office of Strategic Analysis & Communications.

› Back to Top

Several Events Planned to Celebrate Curiosity Landing on Mars

NASA's Mars Science Laboratory mission is preparing to set down a large, mobile laboratory -- the rover Curiosity -- at 12:30 a.m. CDT Aug. 5 using precision landing technology that makes many of Mars' most intriguing regions viable destinations for the first time.

Image left: This artist concept features NASA's Mars Science Laboratory Curiosity rover, a mobile robot for investigating Mars' past or present ability to sustain microbial life. (NASA/JPL-Caltech)

To mark this momentous occasion, the Marshall Space Flight Center and the U.S. Space & Rocket Center are teaming up on several fun-filled events, open to the public:

- **"Pass the Torch" lecture with Dr. Barbara Cohen:** On Aug. 2, Dr. Barbara Cohen, a planetary scientist at the Marshall Center, will be the featured speaker at the Space & Rocket Center's "Pass the Torch" lecture. She will talk about NASA's exploration of Mars -- from Pathfinder, to Spirit and Opportunity, to the Mars Curiosity rover. The event will be at 5 p.m. at the Space & Rocket Center's Davidson Center for Space Exploration 3D theater.
- **Mars Snoozeum:** The Space & Rocket Center will host an overnight sleepover Aug. 5 under the Saturn V rocket at the Davidson Center. Several Mars-themed activities are planned, including guest speakers, a digital movie, a late meal and celebratory pancake breakfast the next morning. The event is open to families with children ages 7 and older. Check-in time is 8 p.m. Cost is $35 per person, and $25 for Space & Rocket Center members. Reservations, due Aug. 1, can be made by calling 256-721-7114 or 256-721-7218. More information is available here.
- **"Mars as Art" exhibit:** The Space & Rocket Center has a special "Mars as Art" exhibit, featuring selected images returned by NASA and European Space Agency spacecraft. The images were selected by a panel of professional artists, photographers and photo editors from more than 5,000 entries for the exhibit. The images also will be made available to other science museums across the country.

Updates on Curiosity landing events will be posted on ExplorNet for Marshall team members.

During the 23 months after landing, Curiosity will analyze dozens of samples drilled from rocks or scooped from the ground as it explores with greater range than any previous Mars rover. Curiosity will carry the most advanced payload of scientific gear ever used on Mars' surface, a payload more than 10 times as massive as those of earlier Mars rovers. Its assignment: Investigate whether conditions have been favorable for microbial life and for preserving clues in the rocks about possible past life.

For more information about the Mars landing, visit http://www.nasa.gov/mission_pages/msl/index.html.

› Back to Top

Recent Mentor-Protégé Agreements Foster Collaboration, Advance Capabilities

By Rick Smith and Megan Davidson

Recently, one NASA Mentor-Protégé agreement came to a successful close, while another was signed into a promising beginning.

Image right: Avans Machine & Tool employees, with representatives from NASA and Pratt & Whitney Rocketdyne, cut the ribbon at their recently expanded Scottsboro facility July 11. (NASA/MSFC/Ray Downward)

On July 11, Avans Machine & Tool of Scottsboro, Ala., hosted an open house to celebrate the successful conclusion of its two-year NASA Mentor-Protégé agreement with Pratt & Whitney Rocketdyne of Canoga Park, Calif. Overseen by the Marshall Space Flight Center, the three-year program has been "instrumental" in the firm's successful business expansion, according to company spokespersons.

Established in 1989, Avans Machine & Tool has provided precision machining and fabrication support to a number of Marshall Center large business prime contractors. The company manufactures hardware components and equipment for aerospace, defense, industrial and medical industry customers. Avans is a Historically Under-utilized Business, or HUB, Zone-certified small business. The HUBZone Program was created by the federal government in 1997 to empower economically challenged communities by contracting with local small businesses and employing local residents.

On July 12, the Marshall Center hosted a two-year signing agreement between Pratt & Whitney Rocketdyne and Alabama A&M University in Huntsville. Historically black colleges and universities, such as Alabama A&M University, are American schools established before 1964 with the primary purpose of educating African-American students.

Pratt & Whitney Rocketdyne has been the prime contractor for the development and testing of the J-2X rocket engine since 2007. The J-2X will power the upper stages of the Space Launch System, NASA's next heavy-lift launch vehicle.

Image left: Marshall Center management and representatives from Pratt & Whitney Rocketdyne and Alabama A&M University met July 12 at Building 4200 to sign a two-year Mentor-Protégé agreement. Signing the agreement are, front row, from left, Kim Spencer, a contracting officer at the Marshall Center; Dr. Andrew Hugine Jr., president of Alabama A&M University; and Paul Fowler, director of supply management at Pratt & Whitney Rocketdyne. (NASA/MSFC/Emmett Given)

The NASA Mentor-Protégé Program, established in 2008 by NASA's Office of Small Business Programs, pairs large companies with eligible small businesses and institutions to establish long-term relationships, enhance technical capabilities and enable them to successfully compete for larger, more complex prime contract and subcontract awards.

For more information about the NASA Mentor-Protégé Program, visit http://osbp.nasa.gov/mentor.html.

Smith and Davidson, AI Signal Research Inc. employees, support the Office of Strategic Analysis & Communications.

› Back to Top

J-2X Engine With Nozzle Extension Goes the Distance

NASA engineers conducted a 550-second test of the new J-2X rocket engine at Stennis Space Center on July 13. The J-2X engine will power the upper-stage of a planned two-stage Space Launch System, or SLS. The SLS will launch NASA's Orion spacecraft and other payloads, and provide an entirely new capability for human exploration beyond low-Earth orbit. Designed to be safe, affordable and flexible for crew and cargo missions, the SLS will continue America's journey of discovery and exploration to destinations including nearby asteroids, Lagrange points, the moon and ultimately, Mars.

The test, conducted on the A-2 Test Stand, continued a series of firings to gather critical data for engine development. This was the first flight-duration test of the engine's nozzle extension, a bell-shaped device to increase engine performance.

Operators collected data about the nozzle extension's performance in conditions that simulated heights up to 50,000 feet. Additionally, operators introduced different propellant pressures at startup to test how the engine reacted. The J-2X is being developed by Pratt & Whitney Rocketdyne of Hartford, Conn., for the Marshall Space Flight Center. It is the first liquid oxygen and liquid hydrogen rocket engine rated to carry humans into space to be developed in 40 years. (NASA/SSC)

› Back to Top

Latest Crew Blasts Off For International Space Station

Three new crew members docked at the International Space Station at 11:51 p.m. CDT July 16. NASA Flight Engineer Sunita Williams, Russian Soyuz Commander Yuri Malenchenko and Japan Aerospace Exploration Agency Flight Engineer Akihiko Hoshide blasted off from the Baikonur Cosmodrome in Kazakhstan at 9:40 p.m. CDT July 14.

Image left: The Soyuz TMA-05M rocket launches from the Baikonur Cosmodrome in Kazakhstan on July 15 carrying Expedition 32 Soyuz Commander Yuri Malenchenko, NASA Flight Engineer Sunita Williams and Japan Aerospace Exploration Agency Flight Engineer Akihiko Hoshide to the International Space Station. (NASA/Carla Cioffi)

Williams, Malenchenko and Hoshide docked their Soyuz TMA-05M spacecraft to the Rassvet module of the station. They join Expedition 32 Commander Gennady Padalka of the Russian Federal Space Agency and Flight Engineers Joe Acaba of NASA and Sergei Revin of Russia, who have been aboard the orbiting laboratory since May 17.

The six crew members will work together for about two months. Acaba, Padalka and Revin are scheduled to return to Earth on Sept. 17. Before they depart, Padalka will hand over command of the station and Expedition 33 to Williams. She, Malenchenko and Hoshide will return home in mid-November.

To follow Twitter updates from the Expedition 32 and 33 astronauts, visit http://twitter.com/Astro_Suni, http://twitter.com/AstroAcaba and http://twitter.com/Aki_Hoshide.

For more information about Expedition 32 and the International Space Station, visit http://www.nasa.gov/station.

› Back to Top

International Space Station Program Scientist Visits Marshall Center

International Space Station Program Scientist Julie Robinson speaks to local media during a visit to the Marshall Space Flight Center on July 11. Robinson was at Marshall conducting Research 101/ISS Ambassador classes to inform employees how to effectively communicate space station research accomplishments. Participants learned about space station research objectives, both as a National Laboratory and as a platform for international cooperation; and examples of the benefits of scientific research and technology development being conducted on the station. (NASA/MSFC/Lori Meggs)

› Back to Top

Marshall's Small Business Specialist David Brock Discusses Effective Marketing During Maine Aerospace Alliance's NASA Industry Day

The Marshall Space Flight Center recently participated in the Maine Aerospace Alliance's NASA Industry Day event in Brunswick, Maine. David Brock, Marshall's small business specialist in the Office of Procurement, left or right (depending on Web layout), discusses how government and contracting agencies can market to NASA. Others from Marshall making presentations were Dr. Sharon Cobb, assistant program manager for the Space Launch System Program, on the SLS and the Orion Multi-Purpose Crew Vehicle; G. Earl Pendley, procurement manager in the Space Transportation Support Office in the Office of Procurement, on the SLS program acquisition overview; and Darlene Hill, internal/external auditor in the Flight Programs & Partnerships Office, on NASA quality system requirements. The Maine Aerospace Alliance assists that state's companies in providing innovative products to the worldwide aerospace market and helps grow that market by making their capabilities known. For more information about the alliance, visit here. (Photo courtesy)

› Back to Top

Dexter Brooks, Director of Federal Sector Programs, to Hold Session About Unconscious Bias at Marshall on July 18

On July 18, Dexter Brooks -- director of the Federal Sector Programs within the U.S. Equal Employment Opportunity Commission in the Office of Federal Operations -- will hold a session titled "Unconscious Bias" at the Marshall Space Flight Center at 1 p.m. in Morris Auditorium, Building 4200. All team members are invited to attend.

He will discuss what inclusion means and how everyone needs to be inclusive in his or her attitudes toward people, while learning to reflect deeply about unconscious biases that may exist. He will share how to stay true to your values while remaining inclusive and respectful to all people.

Before Brooks was named to his current role, he was the Federal Sector Programs' federal training and outreach coordinator, and its attorney advisor. He was responsible for establishing the Federal Sector Training Institute, which provides a variety of courses to the Equal Employment Opportunity Commission, known as EEOC, community. He also served as primary contact to the EEOC's federal sector stakeholders, providing hundreds of outreach sessions throughout the country.

Brooks' career with EEOC began in 1998 as staff attorney in the Office of Federal Operations Appellate Review Program. Before joining the commission, he served as an attorney advisor for the U.S. Department of Labor's Office of Administrative Law Judges.

The Federal Sector Programs has a unique role in assisting federal administrative agencies in the development of strategies designed to prevent discrimination so that federal employees can compete fairly. The EEOC has the authority to investigate charges of discrimination against employers who are covered by the law. For more information about this commission, visit here.

› Back to Top

James E. Kingsbury, Former Director of Marshall's Science & Engineering, Dies


James E. Kingsbury (NASA/MSFC)

James E. Kingsbury, former director of Science & Engineering at the Marshall Space Flight Center, died July 10 at age 83.

Kingsbury's rocket science career began following his graduation from Pennsylvania State University in 1951 when he was drafted into the Army. Instead of being sent to the front lines in Korea with the rest of his company, he was sent to Huntsville to be a part of a small team of German and American rocket scientists that was to develop the Army's rocket program led by Dr. Wernher von Braun, who would later become Marshall's first center director.

Kingsbury was intimately involved in developing almost every aspect of America's space program, from its very beginning with the reliable Redstone rocket, which put America's first satellite in orbit and first astronaut in space. He was heavily involved in developing the Saturn V moon rocket that put Americans on the moon, the Skylab space station, the Hubble Space Telescope and the space shuttle.

During Kingsbury's career, he was awarded almost every NASA award available including twice receiving NASA's highest award of excellence, the Distinguished Service Medal -- one in 1969 for the Apollo moon landings and again in 1981 for his central involvement in the development of the space shuttle. He was recognized in 1981 with the Meritorious Executive In Government Service Award, personally presented by President Ronald Reagan at the White House during a formal dinner and private award ceremony.

Kingsbury was born in Wilkes Barre, Pa., Sept. 25, 1928, where he attended Emory High School, played trumpet in the school band all four years and lettered in track. Kingsbury then went to Penn State, choosing electrical engineering as his major.

He is survived by his wife Alma.

To read about his retirement from the center in the Nov. 26, 1986, Marshall Star, visit here.

Find this article at:

http://www.nasa.gov/centers/marshall/about/star/index.html